

Aquatic Invasive Plants in River Herring Runs

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Photography by Michelson

Fanwort

- aquarium trade origin; now widely distributed in North America
- easily introduced through fragments transported by boats and trailers
- dense beds rooted to soft substrate with long stems



Variable Milfoil

- aquarium trade origin; now widely distributed in eastern North America
- easily introduced through fragments transported by boats and trailers
- dense beds rooted to soft substrate with long stems
- found throughout MA, but favors acidic waters in eastern MA



Invasive Plant impacts to Diadromous Fish

- Passage limitations
- Spawning habitat substrate alteration
- Degradation of nursery habitat

Concerns for Diadromous Fish related to Herbicide Treatments

- Toxicity to early life stages
- Water quality degradation following plant die-off
- Disruption of spawning / nursery habitat

MA Division of Marine Fisheries Role

- MGL Chapter 130 §19** - Maintaining passage for sea-run fish
- MGL Chapter 130 § 17** - Authority for the development and stewardship of marine fisheries resources, habitat, and harvest.
- MGL Chapter 131 § 5C** - Obstruction or interference with lawful taking of fish or wildlife
- MGL Chapter 131 §40**, Wetlands Protection Act. Guidance to DEP on impacts to sea-run fish passage and habitats.
- Massachusetts regulations** (principally CMR 310 10.35). Directs DMF interaction with WPA processes related to protecting diadromous fish runs

Relatively recent role in permit review process (WPA)

Commonly recommending no herbicide applications until after river herring spawning period ends June 15th or June 30th

Nemasket River

- Largest amount of spawning and nursery habitat for river herring in MA
- Held the reputation of largest herring run in MA until 2017
- Significant concerns emerging relating to low river flow and invasive plants



Nemasket River



Agawam River, Wareham



Lake Sabbatia, Mill River, Taunton



- Spawning and nursery target for multi-site, watershed restoration
- Habitat assessment finds significant limitations for river herring and eel habitat

Whitman's Pond, Weymouth

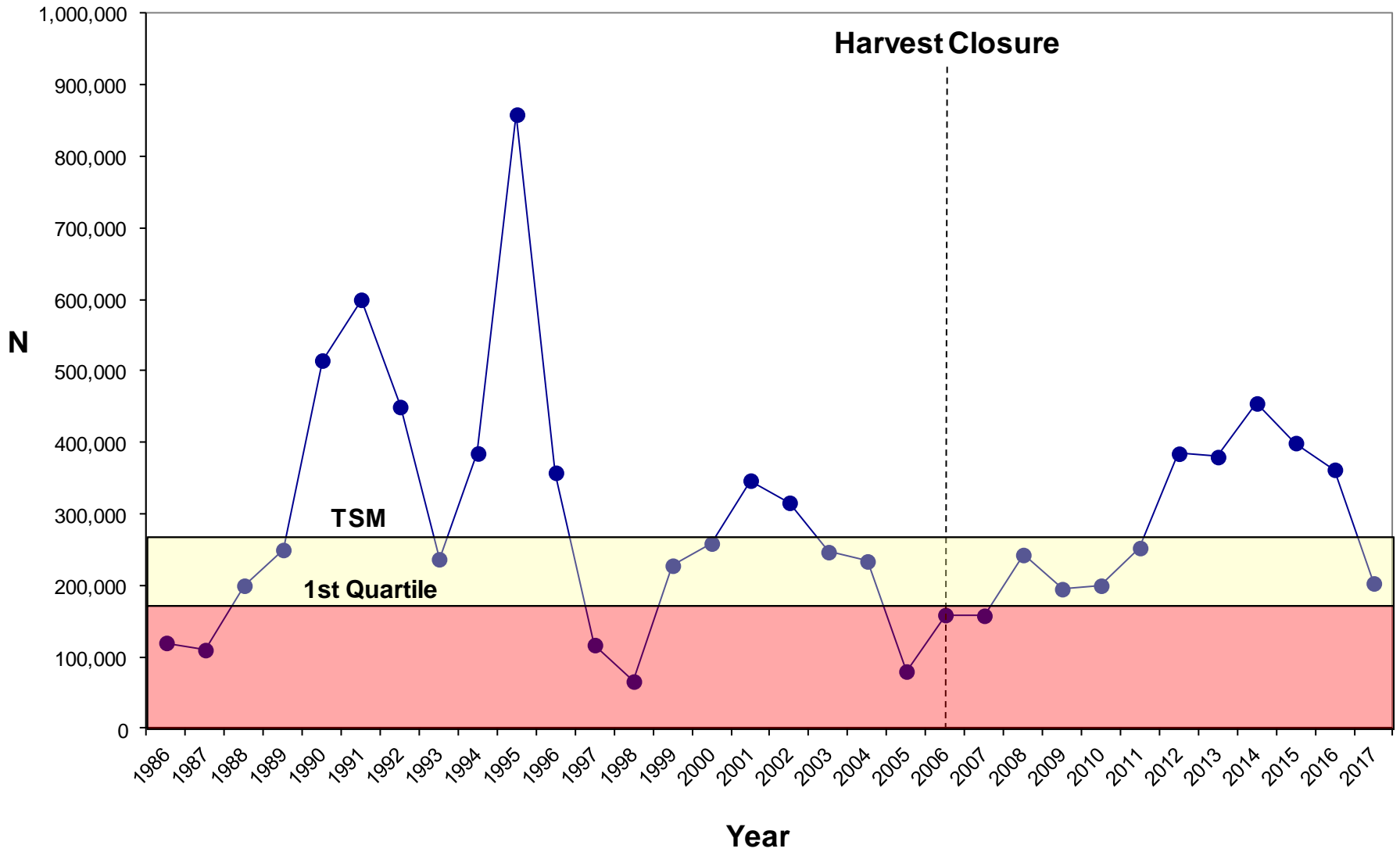
- Invasive plants have persisted for several decades
- Water supply
- Large alewife run: despite water flow, invasive plants and documented habitat degradation



Whitman's Pond



Weymouth Back River - Visual Estimate: 1986 - 2017



Jones River, Kingston



- Important spawning riffles for up to 6 species of diadromous fish



- Over 30 years of DMF monitoring has seen the advance of several plant species that have degraded riffles

Jones River



More than just Milfoil and Fanwort



Workshop Goals

- Better educate stake-holders on prevention and treatment options for invasive plants
- Compare treatment options in terms of benefits and risks to diadromous fish habitat and populations
- Understand what have we learned from herbicide treatment monitoring and how can we improve monitoring to better answer outstanding questions?